UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,660	11/29/2001	Won Sik Kim	K-0347	2627

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EXAMINER
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ART UNIT	PAPER NUMBER
2155	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 November 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☒ All   b)☐ Some *   c)☐ None of:

         1.☒ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-21 are pending in this Office Action.

Priority

2.   This application claims priority of REPUBLIC OF KOREA 2000-71610

(11/29/2000).

3.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Claim Objections

4.   Claim 16 is objected to because of the following informalities: In line 5, "that"

should be "than". Appropriate correction is required.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

6.   Claims 1, 8, 14 and 18 are rejected under 35 U.S.C. 112, first paragraph, as

failing to comply with the enablement requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to enable one skilled in

the art to which it pertains, or with which it is most nearly connected, to make and/or use

the invention. Specifically, all these claims involve issuing a ping according to a

received IP address allocation request of a client. Part of the invention is to use the

ping to determine an available IP address. The IP address to be issued a ping is

selected from a free IP address table (Page 10 of specification, also see claim 10). Of

concern, in terms of enablement, is the claimed subject matter of receiving a reply to

this ping from the same client that issued the IP address allocation request. The

disclosure of the invention does not describe how a client requesting an IP address to

be allocated is capable of responding to a ping issued to an IP address. If the client is

requesting allocation of an IP address, how can the client have an IP address such that

it can respond to a ping? For these reasons of uncertainty of enablement, the

examiner contends that one skilled in the art would not know how to make or use the

invention. Therefore the claims fail to comply with the enablement requirement.

7.   Note: Due to this rejection under 35 U.S.C. 112, first paragraph, the examiner

will interpret the limitations regarding 'receiving a reply from the requesting client' as

'receiving no reply to the ping'.

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9.   Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by "Join

server technical help: Chapter 5 Server/Security Parameter", technical manual from UC

Davis Information Resources Unix Help website, November 11, 1996 (Join).

10.   With respect to Claim 1, Join teaches A Dynamic Host Configuration Protocol

(DHCP) server (Page 1), comprising: an Internet Control Message Protocol (ICMP)

module that issues an ICMP ping packet, based on an IP address allocation request

from a DHCP client (Page 8 'Ping BOOTP Clients'), and registers relevant event

information in a DHCP ping entry (Page 8 'Ping BOOTP Clients' and 'Ping Timeout'); a

determining module that determines whether a reply to the ICMP ping packet came

from the DHCP client requesting the IP address allocation or another DHCP client; and

a first operation module that conducts a DHCP procedure using the registered relevant

event information, if the reply is from the DHCP client requesting the IP address

allocation, and changes the registered relevant event information through the ICMP

module and issues a new ICMP ping packet, if the reply is not from the DHCP client

(Page 8 'Ping BOOTP Clients' and 'Ping Timeout').

11.   With respect to Claim 2, Join teaches all the limitations of Claim 1 and further

teaches the first operation module erases the registered relevant event information from

the DHCP ping entry during the DHCP procedure (Page 8 'Ping BOOTP Clients' and

'Ping Timeout')..

12.   With respect to Claim 3, Join teaches all the limitations of Claim 1 and further

teaches the DHCP procedure is a process for allocating a requested IP address to the

DCHP client requesting the IP address (Page 8 'Ping BOOTP Clients' and 'Ping Timeout').

13.   With respect to Claim 4, Join teaches all the limitations of Claim 1 and further teaches a verifying module that conducts a system timer loop, the system timer loop is used to periodically verify the relevant event information registered in the DHCP ping entry; a comparing module that compares an event occurrence time and an out time, which is set in the relevant event information registered in the DHCP ping entry; and a second operation module that conducts the DHCP procedure using the registered relevant event information and erases the relevant event information from the DHCP ping entry, if the event occurrence time is older than the out time set in the corresponding DHCP ping entry (Page 8 'Ping BOOTP Clients' and 'Ping Timeout').

14.   With respect to Claim 5, Join teaches all the limitations of Claim 4 and further teaches the DHCP procedure is a process for allocating a requested IP address to the DCHP client requesting the IP address (Page 8 'Ping BOOTP Clients' and 'Ping Timeout').

15.   With respect to Claim 6, Join teaches all the limitations of Claim 4 and further teaches the second operation module erases the registered relevant event information from the DHCP ping entry during the DHCP procedure (Page 8 'Ping BOOTP Clients' and 'Ping Timeout').

16.   With respect to Claim 7, Join teaches all the limitations of Claim 1 and further teaches a system clock device that provides timing information to the DHCP server (Page 8 'Ping BOOTP Clients' and 'Ping Timeout').

17.   With respect to Claim 8, Join teaches a method for allocating an Internet Protocol

(IP) address by a Dynamic Host Configuration Protocol (DHCP) server (Page 1),

comprising: issuing an Internet Control Message Protocol (ICMP) ping packet and

registering relevant event information in a DHCP ping entry when an IP address

allocation request is received from a DHCP client (Page 8 'Ping BOOTP Clients' and

'Ping Timeout'); conducting a DHCP procedure using the registered relevant event

information and erasing the registered relevant event information from the DHCP ping

entry, when a reply to the ICMP ping packet is received from the DHCP client

requesting the IP address allocation (Page 8 'Ping BOOTP Clients' and 'Ping Timeout');

and changing the relevant event information registered in the DHCP ping entry and

issuing a new ICMP ping packet, when the reply to the ICMP ping packet is from

another DHCP client (Page 8 'Ping BOOTP Clients' and 'Ping Timeout').

18.   With respect to Claim 9, Join teaches all the limitations of Claim 8 and further

teaches the relevant information includes the IP address, a Media Access Control

(MAC) address of the DHCP client, and an event occurrence time (Page 8 'Ping

BOOTP Clients' and 'Ping Timeout', Page 6 'Assign name by hardware address', and

Page 9 'Restrict to Known MAC address' and 'Use MAC addr as client ID').

19.   With respect to Claim 10, Join teaches all the limitations of Claim 8 and further

teaches discarding the IP address allocation request, received from the DHCP client,

when there is no new IP address available for allocation in a DHCP free IP address

table (Page 8 'Ping BOOTP Clients' and 'Ping Timeout').

20.   With respect to Claim 11, Join teaches all the limitations of Claim 8 and further

teaches operating a system timer loop used to periodically verify the DHCP ping entry;

comparing an event occurrence time registered in the DHCP ping entry and a set DHCP

ping out time; and conducting the DHCP procedure using the registered relevant

information and erasing the relevant event information from the DHCP ping entry if the

registered event occurrence time is older than the set DHCP ping packet out time (Page

8 'Ping BOOTP Clients' and 'Ping Timeout').

21.   With respect to Claim 12, Join teaches all the limitations of Claim 11 and further

teaches the relevant information includes the IP address, a Media Access Control

(MAC) address of the DHCP client, and an event occurrence time (Page 8 'Ping

BOOTP Clients' and 'Ping Timeout', Page 6 'Assign name by hardware address', and

Page 9 'Restrict to Known MAC address' and 'Use MAC addr as client ID').

22.   With respect to Claim 13, Join teaches all the limitations of Claim 11 and further

teaches the system timer loop is operated with a system clock device provided in the

DHCP server (Page 8 'Ping BOOTP Clients' and 'Ping Timeout').

23.   With respect to Claim 14, Join teaches a server (Page 1), comprising: an Internet

Control Message Protocol (ICMP) module that issues a ping packet according to a

received Internet Protocol (IP) address allocation request (Page 8 'Ping BOOTP Clients'

and 'Ping Timeout'); a determining module that determines whether a reply to the

issued ping packet came from a first client that requested the IP address allocation or

from a second client; and a first operation module that allocates an IP address to the

first client if the first client is determined to have sent the reply (Page 8 'Ping BOOTP

Clients' and 'Ping Timeout').

24.   With respect to Claim 15, Join teaches all the limitations of Claim 14 and further

teaches the first operation module discards the IP address allocation request if the

second client is determined to have sent the reply (Page 8 'Ping BOOTP Clients' and

'Ping Timeout').

25.   With respect to Claim 16, Join teaches all the limitations of Claim 14 and further

teaches a comparing module that compares an event occurrence time stored by the

ICMP module in a ping entry with an out time set in the ping packet (Page 8 'Ping

BOOTP Clients' and 'Ping Timeout'); and a second operation module that erases the

ping entry if the event occurrence time is older that the out time (Page 8 'Ping BOOTP

Clients' and 'Ping Timeout').

26.   With respect to Claim 17, Join teaches all the limitations of Claim 14 and further

teaches a verifying module that repeatedly induces the server to determine whether the

reply has been received (Page 8 'Ping BOOTP Clients' and 'Ping Timeout').

27.   With respect to Claim 18, Join teaches a method of allocating an Internet

Protocol (IP) address with a server, comprising: issuing a ping packet according to a

received IP address allocation request (Page 8 'Ping BOOTP Clients' and 'Ping

Timeout'); determining whether a reply to the issued ping packet came from a first client

that requested the IP address allocation or from a second client (Page 8 'Ping BOOTP

Clients' and 'Ping Timeout'); and allocating the IP address to the first client, if the first

client is determined to have sent the reply (Page 8 'Ping BOOTP Clients' and 'Ping

Timeout').

28.   With respect to Claim 19, Join teaches all the limitations of Claim 18 and further

teaches discarding the IP address allocation request if the second client is determined

to have sent the reply (Page 8 'Ping BOOTP Clients' and 'Ping Timeout').

29.   With respect to Claim 20, Join teaches all the limitations of Claim 18 and further

teaches comparing an event occurrence time stored in a ping entry with an out time set

in the ping packet (Page 8 'Ping BOOTP Clients' and 'Ping Timeout'); and erasing the

ping entry if the event occurrence time is older than the out time (Page 8 'Ping BOOTP

Clients' and 'Ping Timeout').

30.   With respect to Claim 21, Join teaches all the limitations of Claim 18 and further

teaches repeatedly determining whether the reply has been received (Page 8 'Ping

BOOTP Clients' and 'Ping Timeout').

Conclusion

31.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

32.   U.S. Patent 5,724,510 by Arndt et al. "Method of Configuring a Valid IP Address

and Detecting Duplicate IP Addresses in a Local Area Network" March 3, 1998.

Discloses the use of broadcasting messages, such as ARP messages, to elicit

responses from any possible node. Duplicate IP addresses can be discovered in this

manner and can be selectively diagnosed and corrected.

33.   U.S. Patent 5,835,720 by Nelson et al. "IP Discovery Apparatus and Method"
November 10, 1998.   Discloses the use of pings in order to determine network
topology.

34.   U.S. Patent 6,115,545 by Mellquist "Automatic Internet Protocol (IP) Address
Allocation and Assignment" September 5, 2000. Discloses the use of a ping to
determine if an address is in use before allocating the address to a requesting device.

35.   U.S. Patent 6,810,420 by Buse et al. "Allocation of IP Address by Proxy to
Device in a Local Area Network" October 26, 2004. Discloses a reiterative test for
address conflict by using an ARP or ICMP echo request.

36.   U.S. Patent 6,826,611 by Arndt "Apparatus and method for automatically
obtaining a valid IP configuration in a local area network" November 30, 2004.
Discloses the use of a ping in determining a valid IP configuration of a network with
respect to a valid subnet.

37.   "DHCP: Detecting and Flagging Duplicate IP Addresses" from
support.microsoft.com, Article ID 161430. Last review August 8, 2001. Discloses the
use of pings in detecting and working around duplicate IP addresses. The examiner
notes the functionality was implemented in the Windows NT 4.0 Service Pack 2, which
was available by late 1996.

38.   Thurrott, Paul, "Windows NT 4.0 Service Pack 2 avaiable" published by
www.windowsitpro.com, December 19, 1996. Article #16602. Establishes the Windows
NT 4.0 Service Pack 2, which includes a ping functionality used in conjunction with
DHCP for detecting address conflicts, was available as of the publishing date.

39.   Dulaney et al. "Integrating Unix and NT Technology", the chapter 'Dynamic Host

Configuration Protocol', 29th Street Press, June 1999. Excerpt from the book available

from www.windowsitpro.com. Discloses the use of ping for conflict detection in

allocation of addresses by DHCP.

40.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to David Lazaro whose telephone number is 571-272-

3986. The examiner can normally be reached on 8:30-5:00 M-F.

       If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hosain Alam can be reached on 571-272-3978. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

       Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

David Lazaro
February 17, 2005

HOSAIN ALAM
ADVISORY PATENT EXAMINER